GGERI: Manuals for Project Preparation and Implementation

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GGERI Manuals for Project Preparation and Implementation

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Version: March 2001

National Climate Change Coordination Center

Astana, Kazakhstan

1. Explanations

The purpose of this manual is to provide operational guidelines for the implementation of activities related to baseline determination for Joint Implementation (JI)/Clean Development Mechanism (CDM) projects in Kazakhstan. The manual is designed for use by project developers as well as both government officials and "operational entities" (described below) that prepare JI/CDM projects undertaken in Kazakhstan.

The baseline (sometimes referred to as the "reference case") is the level of emissions of the activity that would have taken place in the absence of the project activity. We present you with a mandatory procedure for the preparation of a baseline for your project and provide you with criteria to help you to identify the approach that represents the appropriate baseline for your project. Please note that a baseline must be established for each project sub-system. The emissions baseline for the project is the sum of the emissions baselines for the sub-systems. This procedure has been developed by Kazakhstan's National Climate Change Coordination Center (CCCC), which is the institution responsible for the administration of the CDM in Kazakhstan. The focus of the manual is on meeting international requirements for JI/CDM projects.

This manual is an integrative part of the uniform project design document (UPDD) which is the document that is to be used by all project developers that propose and submit project documentation.

Context

Baseline determination is guided by the language of document FCCC/SB/2000/10/Add.2 which provides the basis for national regulation on this issue. It stipulates that a baseline should be considered to be a reasonable representation of the emissions by sources that would occur in the absence of the proposed project activity. Baseline determination must be based on an approved methodology. In the absence of appropriate and approved methodologies, CCCC has adopted the following methodology that represents international best practice.

Very closely related to the concept of baselines is the concept of "additionality." Under international rules that will govern JI/CDM, a project activity must be additional—that is, the project developer must demonstrate that the project would not have been undertaken if it were not for its greenhouse gas mitigation benefits. In this section we also ask you to describe why the proposed project is additional.

Once project concepts/ideas have been identified (including relevant properties related to system boundaries, measurability of emissions and the permanence of emission reductions), a baseline and a crediting period needs to be established.

On the basis of an approved baseline methodology, the project developer (or qualified third parties hired by the project developer) prepares a baseline study for the proposed project. The

results of that study are provided in a baseline document. This document becomes part of the project design document, and in accordance with provisions on confidentiality, is made publicly available.

Procedure

For the system boundaries of every sub-system that was identified in the Systems Boundary section of the UPDD, this manual guides users through the following steps:

1. Defining baseline alternatives
2. Multi-criteria based ranking of baseline alternatives
3. Selection of most suitable baseline from the identified alternatives
4. Determination of crediting period
5. Summary analysis of project additionality compared to the selected baseline
6. Projection of baseline emissions over the crediting period

One baseline form must be filled out for every sub-system that delivers a net GHG emission effect (increase/decrease) as a result of project implementation. This information is to be aggregated in the summary form.

2. Forms

Form A-Sub: Baseline determination for a project sub-system

A.1 Defining Baseline Alternatives

For each emissions sub-system, please complete the following descriptions of potentially viable baseline alternatives. Note that for some of the questions your answers may be the same.

A.1.1 Status Quo

Please describe the status quo—i.e., the activity that is currently taking place.

A.1.2 Modified Status Quo

Please describe the status quo plus planned or required modifications to the existing facility that will have an impact on greenhouse gas emission levels.

A.1.3 Benchmark of Recent Activities

Please describe what technologies and practices have been employed by projects that have been undertaken in the last three years and that are similar to the proposed project in terms of purpose, outputs, location, size and operating characteristics? (If the three-year time frame results in an inadequate population of recent activities, expand the time frame as necessary.) Among these practices:

What was the average emission rate for these technologies/practices?

Which technology/practice had the median emissions rate?

Which had the lowest greenhouse gas emissions rate?

Please note that CCCC will compile a database of technologies (and their emission rates) for certain industries. Please refer to this database if your project is in one of the relevant industries.

A.1.4 Matrix of Locally Available Technologies

Please use the CCCC list of technologies that are approved to represent the appropriate baseline for projects in certain industries. If your proposed project is in one of these sectors, please use the list to identify the technology that is applicable to the project sub-system and list that technology here. If your project is not in one of the sectors listed in the list, do not answer this question. This list will be compiled by the CCCC and updated regularly.

A.1.5 Hypothetical Scenario

Please describe other possible alternatives if you believe that the proper baseline for the project sub-system is something other than the alternatives identified above.

A.2 Ranking of Alternatives

Please respond to the questions below to assist you in determining which of the alternatives identified in Section A.1 represents the most likely scenario and therefore the baseline. For each question, please provide an answer for each baseline alternative.

A.2.1 Regulatory Environment

Is the technology/practice required under local and national laws and regulations?

A.2.2 Technology

Does the technology/practice represent conventional practice in the industry, or does it include an element of innovation beyond conventional practice? Does it create operational, maintenance or other risks that exceed normal levels?

A.2.3 Economics

Is the technology/practice economically competitive with other available technologies/practices?

Are capital costs higher or lower?

Are operating and maintenance costs higher or lower?

Are unit production costs higher or lower?

Does the technology/practice receive government subsidies or concessional financing?

A.2.4 Market Barriers

Has the technology/practice achieved a high level of market acceptance? If not, what barriers to acceptance does it face, both financial and non-financial?

A.3 Choosing the Baseline

Based on your above answers, which alternative represents the appropriate baseline for the project sub-system under examination? Which is most likely to have taken place or been used if the proposed project were not undertaken?

Which one(s) are required under the law?

Which represent the standard industry practice?

Which are economically competitive?

Which face difficult barriers to acceptance?

A.4 Baseline Validity Period

The baseline chosen in A.3 will remain valid for a limited period of time – the period of time for which it truly represents the activity that will be replaced by the proposed project. For each project emissions sub-system, please define the amount of time for which you think the baseline should be valid.

A.5 Additionality

Now apply the questions presented in A.2 on a comparative basis between the selected baseline and the proposed project. For each project sub-system, describe how and why the proposed sub-system is additional to what would have occurred in the absence of greenhouse gas mitigation considerations.

Is the technology/practice required by law?

What elements of innovation does it include? What additional risks come with its adoption? How does it go beyond conventional industry practice?

If emission reductions are not assigned a financial value, how economically competitive is the technology/practice with competing options?

Does the technology/practice contribute to technology transfer, strengthen local capacity, introduce innovative financing arrangements, raise awareness of new products, technologies and practices, increase pressure for technological change, or otherwise transform the local market?

A.6 Projection of baseline emissions over the crediting period

Please provide a projection of the expected greenhouse gas emissions impacts of the baseline for each year that is included in the crediting period and in total. Figures can be shown for emission totals or rate based emissions (emissions per unit of output). Please show the emissions impacts of each project sub-system separately. A detailed discussion of how to calculate project GHG emissions is provided in the Reporting Manual.

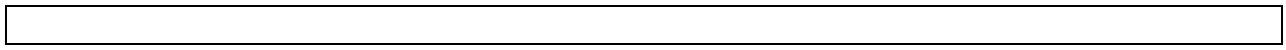
Form A-tot

A.7 Project Baseline Validity Period

The baseline chosen in A.3 will remain valid for a limited period of time—the period of time for which it truly represents the activity that will be replaced by the proposed project. For each project emissions sub-system, please define the amount of time for which you think the baseline should be valid.

A.8 Aggregate projection of baseline emissions over the crediting period

Please provide the total projection of baseline emissions for each year that is included in the crediting period and in total.



3. Instructions

The most recent draft text for the international rules for implementing the JI/CDM define the baseline for a JI/CDM project activity as "the scenario that reasonably represents the anthropogenic emissions by sources [or anthropogenic enhancements of removals by sinks] that would occur in the absence of the proposed project activity." The baseline is also sometimes referred to as the "reference case." In this manual we ask you to define the baseline for your project. In practice, you must establish a separate baseline for each emissions sub-system of the project. The project's emissions baseline is the sum of the emissions baselines for the sub-systems. The questions provided in A.1 are designed to be tools that assist you to conceptualize the baseline for your project in different ways.

Closely related to the concept of baselines is the concept of additionality. Under UNFCCC rules a project may not be validated as a JI/CDM project unless the greenhouse gas emission reductions provided by the project are additional to those that would have occurred in the absence of the project. This means that the project developer must demonstrate that the reason the project is taking place is its greenhouse gas mitigation impacts. Or said another way, if the project itself is more likely to have occurred than any of the baseline scenarios, the project is not additional and cannot qualify as a JI/CDM project.

The international rules governing baseline setting and additionality are still under negotiation. CCCC has developed this manual based on its best understanding of what the final rules are most likely to be. If this understanding differs materially from the rules that emerge from the international rule-making process, then revisions to the PDD and this manual will be necessary.

A.1 Defining Baseline Alternatives

In this section you are to provide a number of different definitions for the baseline for each emissions sub-system of your project.

In general, for projects such as efficiency improvements and fuel switches at existing facilities, setting the baseline will involve identifying what was likely to happen at the plant if the proposed project were not undertaken. If nothing that impacts greenhouse gas emission levels is planned, expected or required to take place, then the emissions baseline is simply the current greenhouse gas emissions level. This approach is also appropriate for projects such as methane capture at coalmines and landfills where methane is not now being captured. While developers of projects at existing facilities should fill out all questions in Section A.1, Questions A.1.1 and A.1.2 are likely to be most relevant.

For new construction ("greenfield") projects, in general the baseline is set by identifying the facility that would be built if the project were not undertaken. Because of the difficulties associated with forecasting the activities that will take place in the future, this is done by referring to the activity that has been undertaken in the recent past rather than to planning documents. Questions A.1.3 and A.1.4 pertain to new construction projects.

A.1.1 Status Quo

If your project takes place at an existing facility or replaces an existing facility, then one possible baseline for the project sub-system is the emissions level of the existing sub-system. Types of projects that fit into this category include efficiency improvements, shutdown/replacements and the re-tooling of manufacturing capacity to produce a different product mix.

Using current emission levels as the baseline is appropriate when modifications to the existing facility are not planned or required. Even in this simple case, however, it is important to take account of expected future changes in project activity levels.

If the project is expected to cause an increase in product output, then two baselines become necessary: one for emissions associated with historical production levels and another for the incremental production, because the incremental production results in a decrease in production and the avoidance of greenhouse gas emissions at another facility in the system. (It is assumed here that the level of demand is fixed and independent of the facility's production level.)

As an example, consider an efficiency improvement at an existing power plant that results in increased electricity production. (The same amount and type of fuel is combusted.) The emissions associated with the historical level of electricity production would be compared to historical emissions at the existing plant, and emissions associated with incremental electricity production would be compared to the avoided emissions from another facility.

To perform the second part of the calculation, the project developer must identify either the existing power generating resource(s) that have reduced their production as a result of the project (if new generating resources are not being added to the system) or the expected capacity addition that is made unnecessary by the project (if new capacity is being added to the system.) If this information cannot be obtained, then you may choose the system-wide average greenhouse gas emissions rate as a baseline for the project's incremental production.

Baseline for Efficiency Improvement that Results in Higher Product Output
=
Historical Emissions for the Emissions Sub-system
+
(Incremental Production x Emissions Rate at Displaced Facility)

If future production levels are expected to differ from historical levels but not because of the project, then the baseline is set by calculating the historical rate of GHG emissions per unit of product and then applying this rate to the expected production level in the future. The formula for this calculation is the following:

Baseline emissions
=
(Historical Emissions/Historical Output)
x
Expected Output

This approach is relevant to projects at existing facilities that have been idle or had excess capacity but that are expected to run at higher capacity levels in the future.

A.1.2 Modified Status Quo

It is important to consider the fact that technical improvements or changes in operating procedures that affect greenhouse gas emission levels may already have been planned for the facility or are required under new laws and regulations. If this is the case, then these changes must be taken into account when setting the sub-system's baseline. For example, if planned efficiency improvements at an industrial facility are expected to result in reduced greenhouse gas emissions (and assuming constant output), then the baseline should be the expected level of emissions rather than the historical level. In determining a "modified status quo" baseline, expected changes in output must be considered, as they are in determining a "status quo" baseline. Again see the discussion for Question A.1.1 above.

A.1.3 Benchmark of Recent Activities

This question asks you to gather information about and apply your knowledge of industry technologies. There are four steps involved in answering the question:

1. Define a population of relevant activities undertaken in the last three years (or longer, if necessary. Please justify the reason for extending the period.) Criteria to be used in defining the population include the project's purpose, outputs, location, size and operating characteristics (e.g., base vs. peak load for power plants.)

2. Next, collect information on the greenhouse gas emission rates of the population.

3. Third, analyze the information to identify potential baseline emission rates and then answer the following questions:
   a. What is the average greenhouse gas emissions rate of the projects? The average is calculated by dividing the total emissions for all projects included in the population by the total production of those projects.)
   b. What is the median emissions rate? (The median emissions rate is the rate of the activity that is in the middle when the facilities are ordered from highest emission rate to lowest emission rate. For example, if the population includes five facilities, the emissions rate of the facility with the third-highest emissions rate is the median emissions rate.)
   c. What are the emission rates of the activities in the top 20 percent (with respect to GHG emission rates) of projects?

4. Calculate alternative sub-system baselines by multiplying the rates from step c. by the proposed project's expected output.

CCCC will develop a database of information on recent activities in a number of sectors. It will include information on technologies employed and greenhouse gas emission rates. If your project is in one of these sectors, then you should use this information as it becomes available when developing your project's baseline.

A.1.4 Matrix of Locally Available Technologies

CCCC will also develop a list of pre-approved technologies and practices that represent appropriate baselines for projects in a number of sectors. In developing the list, CCCC will take into account factors such as project purpose, products produced, project size and operating characteristics. If you are undertaking a project in one of these sectors, please consult CCCC and use the applicable pre-approved technology or practice. If your project is in another sector, you do not need to complete this question.

A.1.5 Hypothetical Scenario

This question provides you with the opportunity to step outside of the more formal alternative baseline options discussed above and provide your opinion on what the appropriate baseline is. If you believe that the appropriate baseline has been identified above then state that here. In answering this question, you may find it useful to refer to Section A.2, which provides criteria for evaluating baseline alternatives. You do not need to elaborate here the reasons that you believe the baseline you have identified is appropriate, because you will have the opportunity to do so in Section A.2.

A.2 Selecting from Among the Alternatives

The purpose of this question is to assist you in selecting the proper sub-system baseline from among the options developed in Section A.1. In this section you should justify your choice.

You must answer each question in this section for each baseline alternative and for each project sub-system. If your project has only one emissions sub-system and you provided answers for Questions A.1.1 through A.1.3 (meaning that thee are three baseline alternatives), then you must provide three answers to each question in Section A.2 (one for each baseline alternative identified.) If your project has three sub-systems and three baseline alternatives, then you must provide nine answers for each question in Section A.2. (3 x 3.)

A.2.1 Regulatory Environment

In answering this question, consider both existing and planned local, regional and national laws and regulations that govern your industry. What technologies and practices are required under these rules? If the baseline alternative under consideration is required by law, then it is more likely to represent an appropriate baseline.

A.2.2 Technology

Here consider the technologies that are currently employed and expected to be employed in your industry. Which technologies represent standard practice and which are considered innovative, risky or appropriate only in selected applications? If the baseline alternative under consideration is conventional, then it is more likely to represent an appropriate baseline than technologies that are not.

A.2.3 Economics

Consider the capital costs, operating and maintenance costs, unit production costs and other economic variables associated with the baseline alternative under consideration. If the baseline

option is a low-cost option relative to other options, then it is more likely to represent the appropriate sub-system baseline.

A.2.4 Market Barriers

If the baseline alternative under consideration is not widely accepted, what are the reason(s)? Are there non-economic or institutional barriers (for example, lack of information, the fact that energy users do not bear the costs of energy use) that inhibit acceptance of the technology? Technologies that face such barriers are less likely to represent the appropriate baseline than technologies that do not. Similarly, if the baseline alternative includes characteristics that contribute to local capacity building, the overcoming of barriers and the transformation of the local market, then it is probably not an appropriate baseline. Ways that a technology or project activity might remove barriers include the following:

- introducing new operating and maintenance practices;
- introducing new financing arrangements;
- applying pressure for technological change;
- increasing consumers' willingness to pay for clean (low-carbon) products and services; and
- strengthening the local supply chain for production inputs such as energy.

A.3 Choosing the Baseline

Consider your answers to Questions A.2.1 through A.2.4 and for each project sub-system, choose the appropriate baseline. It may be that some of your answers point to one baseline option while other answers point to a different option. If this is the case, then you must decide upon the baseline by determining which answers deserve the greatest weight. In such cases you should justify your choices.

A.4 Baseline Validity Period

To ensure the permanence of the emission reductions it generates, a proposed JI/CDM project activity must have an emissions baseline for its entire operational life. Otherwise, the emission reductions generated early in the project might be partially or completely offset later by emissions increases that are not recognized. This does not mean, however, that the baseline must remain the same over the entire life of the project. A particular baseline should be used only for as long as it is applicable—that is, for as long as it is fact the activity that is being replaced by the proposed project activity. In other words, one must distinguish the project life from the project's baseline validity period.

For a JI/CDM project that involves the construction of a new facility, the baseline is established by identifying the facility that would have been constructed if the proposed project were not undertaken and the appropriate validity period for the baseline is the expected operational life of the facility that was not constructed. Given the long capital turnover rates for industrial projects, this could be ten years or more. For a JI/CDM project at an existing facility, on the other hand, the baseline scenario could change more rapidly as a result of changes in the external environment (for example, changes in energy prices.) This suggests the need to review the baseline frequently and therefore a shorter initial validity period.

Considering again the project-specific information provided in Section A.2 and any other information you feel is relevant, please identify the proper validity period for the baseline chosen in Question A.2.5 for each project sub-system.

Please note that the rules governing the establishment of JI/CDM baseline validity periods (also known as crediting periods) have not yet been agreed. It may be necessary to revise the validity period chosen here after the rules have been finalized.

A.5 Additionality

As noted above, a project cannot be considered for inclusion in the JI/CDM unless its greenhouse gas emission reductions are additional to those that would have occurred in the absence of the project. This means that if the project would have taken place if the JI/CDM did not exist, then it cannot qualify as a JI/CDM project. This question asks you to explain why the GHG reductions from the proposed projects should be considered additional. In answering this question, you may find it useful to answer the following questions, which are based upon the questions presented in Section A.2 for assessing baseline options. Additionality must be determined separately for each emissions sub-system.

Regulatory Environment: Is the activity required under local, regional or national laws and regulations? If it is, then it cannot be considered additional.

Technology: Does the technology employed in the proposed project's sub-system represent conventional practice in the industry, or does it include an element of innovation beyond conventional practice? If the technology does not represent conventional practice, introduces innovation into the local industry, and/or introduces unusual operational, maintenance or other risks and challenges, then the project's emission reductions are more likely to be additional.

Economics: If the technology employed in the sub-system is economically competitive with other available technologies/practices (i.e., it offers a higher internal rate of return or results in lower unit production costs), then it may represent the baseline technology and therefore should not be considered additional. However, if the project is economically viable only because it has received government subsidies or concessional financing, then it is more likely to be additional.

Market Barriers and Market Transformation: If the project sub-system includes characteristics that contribute to local capacity building, the overcoming of barriers and the transformation of the local market, then emission reductions are more likely to be additional. As noted at question A.2.4, ways that a technology or project activity might remove barriers include introducing new operating and maintenance practices; introducing new financing arrangements; applying pressure for technological change; increasing consumers' willingness to pay for low-carbon products and services; and strengthening the local supply chain for production inputs such as energy.

Note that for a project sub-system's emission reductions to be considered additional, the sub-system need not meet the additionality test for all of the criteria presented; in fact, it must only convincingly meet the test for one of the criteria.

A.6 Projecting Baseline GHG Emissions

The GHG impact of a project sub-system for a given year is simply the difference between baseline emissions and expected emissions for that sub-system. Here you should project baseline emissions for the life of the project, distinguishing the baseline validity period from the remainder of the project, considering that the baseline could change during project life.

Manual for the development of a project concept validation protocol

Explanations, forms and instructions

Version: March 2001

National Climate Change Coordination Center

Astana, Kazakhstan

1. Explanations

The purpose of this manual is to provide operational guidelines for the development of a project concept validation protocol for a Joint Implementation (JI)/Clean Development Mechanism (CDM) project in Kazakhstan. The manual is designed for use by project developers as well as both government officials and "operational entities" that prepare JI/CDM projects undertaken in Kazakhstan.

This procedure has been developed by Kazakhstan's National Climate Change Coordination Center (CCCC), which is the institution responsible for the administration of the CDM in Kazakhstan. The focus of the manual is on meeting international requirements for JI/CDM projects.

This manual is an integrative part of the uniform project design document (UPDD) which is the document that is to be used by all project developers that propose and submit project documentation.

Context

FCCC/SB/2000/10/Add.2 assigns responsibility to a designated operational entity selected by project participants, and under a contractual arrangement with them, to validate a project activity and any supporting documentation to confirm that the following requirements are met:

- the project has been approved by each Party involved,
- the project participants are eligible to participate in CDM project activities,
- the project activity is eligible under the CDM,
- comments by stakeholders have been considered, in accordance with relevant national requirements
- the baseline complies either with approved methodologies (or modalities and procedures for a new methodology,
- emission reductions are additional to any that would occur in the absence of the proposed project activity,
- provisions for monitoring, verification and reporting of relevant project performance indicators are in accordance with relevant provisions,
- the CDM project activity uses a crediting period that satisfies relevant requirements, and
- the project conforms to all other requirements for CDM project activities.

Definitions

In the context of this manual, the following definition applies:

Validation: Confirmation by examination and provision of objective evidence by an independent and qualified organization before registration that the project design documents, the baseline

study and the monitoring plan meet prescribed requirements. Validation includes the confirmation that the emission reduction as claimed by the project are considered realistic.

Procedure

This manual guides users through the following steps:

- Completion of project documentation, namely UPDD, baseline manual, monitoring manual,
- contracting of operational entity for validation,
- conduct of validation procedure according to pre-defined checklists,
- clarifications and corrective action requests,
- submission of preliminary validation report,
- corrective action response,
- final validation report and validation opinion.

2. Forms

Form B: Validation Protocol

B.1 Submission of project documentation completed *Provide evidence that you have submitted complete project documentation, i.e. through notice of receipt by CCCC.*
B.2 Contracting of operational entity for validation *Please submit the name of the operational entity that you have selected for validation purposes. Please note that the entity has to be accredited by CCCC.*
B.3 Conduct of validation procedure according to a pre-defined checklist *Please validate whether the project documentation addresses the following issues appropriately:* – *Project Boundaries* – *Project Design* – *Predicted Project GHG Emissions* – *Baseline Methodology* – *Baseline Determination* – *Baseline GHG Emissions* – *MVP Boundaries* – *Monitoring* – *MVP Methodologies* – *Indicators/data to be monitored and reported* – *Project Management Planning* – *Procedures for verification* – *Risk assessment* *Please list below the sources of information as well as other activities, including adequate background documents/information, background investigations, project documents and on-site assessments.*
B.4 Clarifications and corrective action requests *Please list when clarifications and corrective action requests were submitted to project sponsors. Enclose a copy of these requests. (This section does not have to be submitted to the CCCC).*

B.5 Submission of preliminary validation report *Please state here when the preliminary validation report was submitted for review to project sponsors and the CCCC. Enclose a copy of the preliminary validation report.*
B.6 Corrective action response *Please state here when the corrective action response was submitted to the OE and CCCC. Enclose a copy of the corrective action response.*
B.7 Final validation report *Please state here when the final validation report and opinion was submitted to project sponsors and the CCCC. Enclose a copy of the final validation report.*

3. Instructions

B.1 Submission of project documentation completed

The draft JI/CDM rules contain a number of provisions regarding the institutional structure of the validation process. These include the following:

a) Project participants must obtain a formal letter of approval from the designated national authority before a project can officially be considered a JI/CDM project.
b) Project participants must establish a contractual arrangement with the OE.
c) In validating a project, the OE must review the project design document (PDD) and any supporting documentation.

These rules suggest that in Kazakhstan the validation process should include the following steps:

1. Project participants complete the PDD.
2. CCCC makes a determination of whether or not to accept the project on the basis of the Project Design Document and according to screening criteria that is has developed. (These screening criteria are described in a separate manual. They are not discussed further in this manual.)
3. Once CCCC has reviewed the PDD and notified the project developer that the project has been formally accepted by the Government of Kazakhstan as a CDM project, the project developer selects and contracts with a designated OE. Note that CCCC may require revisions to the PDD before it accepts the project, or it may reject the project.
4. If the project is accepted, then the project developer submits the PDD to the OE. The OE then reviews the PDD and supporting documentation to assess whether or not the project in question meets all the requirements of a JI/CDM project.
5. If it is satisfied, the OE validates the project and submits the project to the CDM executive board for registration.

B.2 Contracting of operational entity for validation

Under UNFCCC rules, the project developer must select and make a contractual arrangement with a designated operational entity to validate the project. Rules and procedures for accrediting OEs are now being established.

Project developers should choose an OE that:

- Has been formally accredited and is in good standing under UNFCCC guidelines.
- Has technical experience and expertise (e.g., if the proposed project is a renewable energy project, selection of an OE with expertise in forestry projects would not be suitable).
- Possesses relevant financial and legal expertise.
- Is knowledgeable of UNFCCC rules and process.
- Has international recognition and credibility.

- Is accredited to perform ISO 14001 certification or has similar credentials in assessing quality.
- Can provide references from projects of a similar nature.
- Has experience working in Kazakhstan.

When contracting, project participants and the OE should be sure that they agree on the scope and the timeframe of the validation engagement as well as the documents to be produced by the engagement (the PDD will be the main one.) Further, it is essential that the OE be objective, unbiased, and free of conflict of interest. It (and its sub-contractors) must have no financial stake in the project or any of the participants in the project. Similarly, the fees charged by the OE must not be contingent on the outcome of the engagement. "Contingency fees" create a clear conflict of interest.

Operational entities play two roles in the project cycle: validation and verification/certification. Draft UNFCCC rules stipulate that one OE may play both roles, provided that it receives the prior approval of the CDM's executive board.

B.3 Conduct of validation procedure according to a pre-defined checklist

The CCCC has adopted a UPDD that is to be used by all project developers. It includes:

- a description of the project, including its purpose, contribution to sustainable development, technical description, location, and project boundaries;
- Information about the baseline methodology, including the crediting period, operational life, key parameters and assumptions, data sources, historical emissions (if applicable), projection of baseline emissions and emission reductions, and a discussion of how leakage will be addressed;
- A discussion of additionality;
- Information on the project's environmental impact;
- Economic and financial information;
- Comments by local stakeholders;
- The formula to be used to calculate emissions; and
- A monitoring plan.

The validation engagement will include a number of different stages. The Prototype Carbon Fund, a new World Bank institution that has been established to fund greenhouse gas mitigation projects, has developed a manual that describes these steps. They include background investigation, document review, risk-based assessment, on-site assessment, and desk review.

Background Investigation
The purpose of this stage of the validation engagement is to gather the background information needed to formulate a robust understanding of the project and the context in which it is taking place. As noted in the PCF validation manual, The OE will need to understand not only the technical aspects of the project (e.g., the technology employed, gas and power transmission and distribution systems) but also factors such as Kazakhstan's energy and environmental laws, the country's political environment and institutions, the macro-economic situation of the country,

and its sustainable development priorities. To gain this understanding, normally the OE will have to supplement the information provided in the PDD with outside sources. This will be particularly true if the OE has limited experience in the host country or with the particular project type, and when the project is in a sector that has not yet hosted a JI/CDM project.

Document Review

The purpose of this stage is to establish, based on the PDD, the degree to which the project meets the requirements for JI/CDM projects set forth under UNFCCC requirements. This requires, among other things:

- Ensuring that project boundaries have been correctly drawn and determining whether there is a need to monitor emissions impacts away from the project site;
- Assessing whether the data sources used for estimating the baseline are appropriate and the baseline selected represents the most likely representation of what would have happened in the absence of the project;
- Reviewing and evaluating the algorithms for calculating emissions and emission reductions, and ensuring that expected emission reductions have been properly calculated; and
- Evaluating the monitoring plan to ensure that it provides a complete list of the indicators (e.g., fuel consumption) that must be estimated; describes how these data should be gathered, identifies the records that must be kept and how information should be archived, and provides instructions to key personnel regarding the implementation of the monitoring plan.

Risk-Based Assessment

Based on the document review, the OE should then conduct a risk-based assessment to more carefully evaluate the critical aspects of the project's design and assess whether or not the most significant risks and uncertainties associated with the project have been adequately addressed. The critical aspects of project design are those elements that are crucial to the success of the project in meeting the requirements of JI/CDM requirements and in particular in generating GHG emission reductions. Issues that have been clearly identified and addressed in the PDD, are sufficiently accounted for in the project's monitoring plan, and/or are familiar to the project participants and the OE will require less attention from the OE than issues that have not been fully examined, are more difficult to address, and/or are less familiar.

After undertaking the risk-based assessment, the OE may decide that it has enough information to decide whether or not the project should be validated; alternatively, it may decide that further analysis is needed.

Further Analysis

If the OE decides after the risk-based assessment has been performed that further analysis is needed, then it may opt to do a desk study or an on-site assessment (or both.) In cases where the OE is very familiar with the project type and Kazakhstan's legal, political and socio-economic environment, the PDD is organized and clear, and/or the project's additionality is not in question, perhaps because other JI/CDM projects of a similar type have been found to be additional, then nothing more than a desk review may be warranted. On-site assessment is more likely to be necessary in cases where the OE is not familiar with Kazakhstan or the type of project being undertaken and where tough issues arise regarding the project's baseline and additionality. The

OE may also decide that an on-site assessment is needed to obtain input from local stakeholders regarding the sustainable development impacts of the project.

Stakeholder Comments

International rules governing the CDM require that the designated OE make the PDD available for comment to all countries participating in the UNFCCC process as well as to UNFCCC accredited non-governmental organizations. It is not now clear whether these parties will have authority to comment on all aspects of the PDD or only on certain key elements such as baselines, additionality and the monitoring plan. Once the deadline for comments has passed, the OE will take any comments received into account and then decide upon whether or not to validate the project.

Manual for the development of a GHG emissions monitoring plan

Explanations, forms and instructions

Version: March 2001

National Climate Change Coordination Center

Astana, Kazakhstan

1. Explanations

The purpose of this manual is to provide operational guidelines for the implementation of activities related to developing a monitoring plan for a Joint Implementation (JI)/Clean Development Mechanism (CDM) project in Kazakhstan. The manual is designed for use by project developers as well as both government officials and "operational entities" (described below) that prepare JI/CDM projects undertaken in Kazakhstan.

In this section we ask you to describe the project's monitoring plan. The purpose of the monitoring plan is to ensure that the methodologies used to determine the project's emissions impacts are sound and properly applied; that data used in determining emission reductions are of high quality and that data gaps and uncertainties are accounted for; and that quality assurance and quality control procedures are built into the project to ensure that emission reductions are accurately determined.

This procedure has been developed by Kazakhstan's National Climate Change Coordination Center (CCCC), which is the institution responsible for the administration of the CDM in Kazakhstan. The focus of the manual is on meeting international requirements for JI/CDM projects.

This manual is an integrative part of the uniform project design document (UPDD) which is the document that is to be used by all project developers that propose and submit project documentation.

Context

Rules for developing monitoring plans are guided by the language of document FCCC/SB/2000/10/Add.2 which provides the basis for national procedures related to:

- estimation or measurement of GHG that occur (project emissions) and were replaced (baseline emissions) by the project within the project boundary during the crediting lifetime.
- identification of potential sources of enhanced GHG emissions by sources outside the project boundary that are significant and reasonably be attributable to the project activity,
- the collection and archiving of all relevant data necessary to monitor other relevant impacts of the project,
- quality assurance and control procedures,
- procedures for the periodic calculation of reductions of GHG emissions by sources by the proposed CDM project activity, and
- documentation of all steps involved.

Implementation of the monitoring plan is a condition for verification, certification and issuance of CERs, and project participants must prepare a monitoring report for the review of the OE responsible for verification. This report should describe how the project's emissions and emissions impacts have actually been monitored, including any deviations from the monitoring

plan. Under the rules that will govern the GHG emission reduction projects, revisions to the monitoring plan are allowed but must be validated by the designated OC. Project participants will probably want to submit a monitoring report annually to ensure that CERs are produced in a timely fashion.

Definitions

In the context of this manual, the following definitions apply:

- Monitoring is the process by which project participants determine the actual emission reductions generated by the project.
- Measurement is the methodology in which emissions data are measured using standardized or accepted methods.
- Calculation is the methodology in which emissions data are calculated by applying the following equation: Emissions = Activity Rate x Emission Factor x Oxidation Factor.
- Reporting is the process by which the results of monitoring activities are documented and communicated.

Procedure

For the system boundaries of every sub-system that was identified in the [Systems Boundary section of the UPDD], this manual guides users through the following steps:

- Design emissions monitoring plan on the basis of the technical project description and project boundaries for every sub-system including identification of points of measurement, measurement methods and technologies/techniques
- Design monitoring plan for baseline emissions including external factors that affect baseline validity
- Define data quality management system
- Create format for monitoring reports and define reporting periods on the basis of monitoring plan

Please note that the monitoring plan must capture all emission effects that are created as a result of project implementation. Please fill out one form for every project sub-system.

2. Forms

Form C-Sub: Monitoring Plan for Sub-Systems (one form per sub-system)

C.1 Monitoring plan for actual emissions *The questions that follow ask you to provide information on the methodologies and data that will be used to monitor the project's actual emissions.*
C.1.1 Methodology *What methodology will be used to determine the project's actual emissions? In most cases emissions will either be measured directly or they will be calculated by using the following equation:* *Emissions = Activity Data (e.g., energy use) x Emission Factor (emissions per unit of activity) x Oxidation Factor (percentage of carbon combusted*
C.1.2 Activity Data and Point of Measurement *If you will calculate emissions rather than measure them directly, what indicator will you use to measure activity? (In the case of energy-related projects, "activity data" normally refers to data on energy usage)* *Please identify the points of measurement for activity data.*
C.1.3 Emission Factors *Describe the emission factors that will be used when calculating actual emissions. Will you use IPCC default values or develop project-specific emission factors? If the latter, describe the techniques and procedures that you will use. Also, see the special rules in the PDD related to emission factors for electricity and steam.*
C.1.4 Oxidation Factors *Describe the oxidation factors that will be used when calculating actual emissions. Will you use IPCC default values or develop project-specific factors? If the latter, describe the techniques and procedures that you will use. (Note: If in the process of developing project-specific emission factors you have already taken account of carbon that is not oxidized, you should not apply an oxidation factor.)*

C.2. Baseline Emissions

Now provide information on how baseline emissions will be monitored.

C.2.1 Methodology

What methodology will be used to determine the project's baseline emissions? In most cases this methodology corresponds to the methodology used for actual project emissions.

C.2.2 Activity Data

How would baseline activity data have been?

C.2.3 Emission Factors

Describe the emission factors that will be used when calculating baseline emissions. Will you use IPCC default values or site-specific emission factors? Also, see the special rules in this section related to emission factors for electricity and steam.

C.2.4 Oxidation Factors

Describe the oxidation factors that will be used when calculating baseline emissions. Will you use IPCC default values or project-specific factors? (Note: If baseline emission factors are site-specific and already take account of unoxidized carbon, then you should not apply a baseline oxidation factor.)

C.2.5 Identify monitoring plan for key assumptions that justify baseline validity

Describe the main parameters that had an impact on baseline selection (from form A) as well as a monitoring plan to observe continued validity of assumptions made with respect to these parameters.

C.3 Data Quality

Please provide an assessment of the quality of the assumptions that were made to calculate baseline emissions. Be sure to identify any significant data gaps, uncertainties and assumptions.

C.4 Quality assurance and quality control

Please describe the quality assurance and quality control provisions that have been incorporated into the project's design. As part of this, please describe the systems that will be put in place for archiving information related to the determination of the project's emissions impacts.

C.5 Monitoring report

Please provide the format for the monitoring report and define reporting periods.

C.5.1 Monitoring report format

Please provide the format for monitoring reports based on the monitoring plan.

C.5.2 Monitoring report periods

Please provide the schedule for the planned submission of monitoring reports.

3. Instructions

Because

Emission reductions = Baseline Emissions – Actual Emissions

actual emissions and baseline emissions must be determined accurately. The number of emission reductions actually produced is likely to differ from the expected number of emission reductions predicted at the beginning of the project and cited in the project design document.

C.1.1 Methodologies

Two principal methodologies may be used for determining actual project emissions. Following the terminology used in Europe, these methodologies are measurement and calculation. Measurement is the methodology in which emissions data are measured using standardized or accepted methods. The most common tool for measuring emissions is the Continuous Emission Monitor, or CEM. CEMs measure emissions directly by taking a part of the flue gas stream from a stack, measuring the pollutant concentration in this fraction and extrapolating to the total flue gas flux.

Measurement is often viewed as the most reliable method for determining CO2 emissions. However, because CO2 emissions from energy combustion are highly correlated with the carbon content of fuel and are not a function of technology types and plant operating conditions, measurement in many cases will not be more accurate than calculation. Further, stack measurements have been known to slightly over-estimate emissions and are expensive. For this reason measurement of CO2 emissions will not be required of CDM projects in Kazakhstan, though it will be considered an acceptable emissions determination methodology if implemented properly. Calculation is the methodology in which emissions data are calculated by applying the following equation:

Emissions = Activity Rate x Emission Factor x Oxidation Factor

The individual components of this equation are explored in the questions that follow.

C.1.2 Activity Data

In calculating carbon dioxide emissions from energy combustion, the activity rate is the amount of fossil fuel combusted, expressed either in mass (e.g., tons of coal) or in energy units (e.g., GJ.) Projects normally will be able to refer to two sources for activity data: supply records such as fuel invoices and measured data (e.g., readings from meters that measure the flow of fuel into the plant.) From the standpoint of data quality, supply records have the advantage of having been generated by a third party (the fuel supplier), but their disadvantage is that the quantity of fuel purchased is often different than the amount of fuel combusted, for reasons such as inventory changes. In addition, supply records may clearly show the quantity of fuel used by a company or in a facility, but they may not clearly indicate the quantity of fuel used in a particular project activity. CDM projects in Kazakhstan may use both supply records and measured data; what is most important is that project participants are able to demonstrate that the data are accurate and have been collected, organized and archived properly.

Note that default emission factors (discussed next) are expressed in tons of carbon per terajoule consumed (tC/TJ). Therefore if project activity data are denominated in the quantity of fuel used rather than the quantity of energy used, project participants must first convert activity data from mass to energy by multiplying by the net calorific value of the fuel (TJ/kilotons of fuel used.) The IPCC's default net calorific values are provided in the table below.

C.1.3 Emission Factors

For projects that impact CO2 emissions from energy combustion, the emission factor is the amount of carbon dioxide produced per unit of activity (for instance, tons of carbon dioxide emitted per unit of energy consumed.) The emission factor for a fossil fuel is the fuel's carbon content x 3.67, which is the factor for converting carbon into carbon dioxide. (This assumes that all carbon is combusted. Because it is not, a corrective oxidation factor must also be applied. This is described below.)

Project participants should develop their own emission factors wherever possible by analyzing their fuels or by requesting information from fuel suppliers. However, it is recognized that this can be an expensive and time-consuming process. Therefore accepted default emission factors may be used in many circumstances. The Intergovernmental Panel on Climate Change (IPCC), which is the authoritative scientific body studying climate change and its impacts, has developed default carbon content values for coal, oil, natural gas and many other fuels. For coal, the IPCC has developed defaults for the specific types of coal burned in Kazakhstan. The IPCC default carbon content values that may be used by CDM projects in Kazakhstan also are reproduced in Table 1. Because these values are expressed in units of carbon per unit of energy used, they must be multiplied by 3.67 to obtain carbon dioxide emission factors.

Table 1 IPCC Default Values for Net Calorific Values and Emission

For Use in Kazakhstan CDM Projects		
Fuel	**Net Calorific Value (terajoule per kiloton)**	**Carbon Emission Factor (tons of carbon per terajoule)**
Hard coal—imported and domestic	18.58	26.8
Lignite—imported and domestic	14.65	27.6
Sub-bituminous coal	14.65	26.2
Gasoline	44.80	18.9
Jet kerosene	44.59	19.5
Gas/diesel oil	43.33	20.2
Residual fuel oil	40.19	21.1
LPG	47.31	17.2
Ethane	47.49	16.8
Petroleum coke	31.00	27.5

Note: GOK could improve accuracy of emission calculation, reduce costs to project developers by developing more specific default values, e.g. GOK could do analysis of relevant coal seams and find/develop more precise emission factors for natural gas from Russia.

Projects involving non-commercial fuels such as tires, process gases and waste streams should develop their own project-specific emission factors. In keeping with IPCC guidelines for national inventories, projects combusting biomass should consider biomass to be a zero-carbon fuel.

C.1.4. Oxidation Factors

The oxidation factor is the percentage of carbon contained in a fossil fuel that is released into the atmosphere. It is included in the emissions equation to account because default emission factors are based on the assumption that all of the carbon contained in the fuel is combusted, when in fact it is not. The IPCC has also developed fuel-specific default oxidation factors for the major fossil fuels. They are provided in Table 2.

Table 2 Oxidation Factors

Fuel	Oxidation Percentage
Coal	98%
Oil and oil products	99%
Natural gas	99.5%

The use of IPCC default oxidation factors is acceptable in CDM projects in Kazakhstan. However, the percentage of carbon that is not combusted can vary from project to project depending on combustion technology, age of the equipment, and operation and maintenance practices. If the purpose of the project is to improve the oxidation factor so that the facility obtains more energy for each unit of fuel consumed, project participants should calculate project-specific rather than default oxidation factors because use of the default factors will not adequately capture the project's GHG benefits.

If project participants take into account the fact that not all carbon is oxidized when they develop project-specific emission factors, then they essentially have already applied the oxidation factor and should not apply the IPCC default factor as well.

Special considerations for electricity and steam

Calculating emissions impacts associated with imports and exports of electricity and steam can pose special challenges, both with regard to activity data and emission factors. The following rules, which were first presented in UNIDO's recent paper on baselines and additionality, should assist project developers in meeting these challenges.

Import of electricity from the grid. Three methods are available here:

1. Actual observation (preferred method): the GHG emission factor should be modeled as a function of the average GHG intensity of the grid over the grid's load curve (including transmission and distribution losses). Electricity imports should be modeled as a function of electricity imports over the grid's load curve. Annual imported emissions should be calculated as the integral of the product of these two functions over the grid's load curve.

2. Simulation-based approach (second-best method): Instead of actual measurement of GHG intensities over the load-curve, a modeled estimate is used.
3. Benchmark (third best method): The GHG emission factor is the annual average factor for the entire grid, including T&D losses.

Import of electricity from generator. Where there is a supply contract with the generator, the GHG emission factor should be based on the actual fuel fired and the technology employed by the generator, taking into account any transmission losses. Transmission may be via dedicated lines or through a power grid.

Import of electricity from generator with combined heat and power. In this case, electricity and steam have been generated together from the combustion of the same fuel and the GHG emission factor will be lower than if electricity had been generated alone. The emissions from the CHP facility should be assigned to the exported energy streams on the work potential of that stream. This allows the generation of GHG emission factors for each stream, based on energy delivered.

Import of steam. The GHG emission factor is calculated based on the fuel fired, the thermal efficiency of the boiler, and thermal losses in the transmission system.

Import of steam with cogeneration of electricity. In this case, electricity and steam have been generated together from the combustion of the same fuel and the carbon dioxide emission factor will be lower than if steam had been generated alone. The GHG emissions from the CHP facility should be assigned to the exported energy streams on the basis of the work potential of that stream. This will allow the generation of GHG emission factors for each stream, based on energy delivered.

Export of electricity direct to the consumer or the grid. Three cases need to be differentiated. For any sub-system a mix of all three options could apply:

a) Generation from existing electrical power generation capacity is displaced from the grid. The calculation should follow the same (three) methods as described above for electricity imported from the grid, except that electricity exports should be modeled as a function of electricity exports over the grid's load curve. Annual replaced emissions should be calculated as the integral of the product of these two functions over the grid's load curve.
b) Construction of a new electrical power generation capacity and generation from that capacity is avoided. The least cost addition to the grid is determined and integrated into the GHG intensity function of the grid. From there the calculation continues as in a).
c) Exported electricity serves unmet demand (marked by brown-outs and black-outs in the grid), i.e. that existed due to capital constraints. In this case, exported electricity does not displace any other generation.

Export of steam. Where the export of steam is displacing existing capacity, the GHG emission factor is calculated based on the existing fuel mix and the thermal efficiency of the displaced boilers. For new buildings, the emission factor should be based on the use of the least cost fuel supply for similarly sized facilities and using local state-of-the-art high efficiency boilers.

C.2 Baseline Emissions

To translate the baseline scenario identified in Form A into a baseline emission estimate, it is not possible to directly measure emissions (as for the actual project) because the baseline activity was of course not undertaken. Therefore baseline emissions are estimated by applying the calculation formula described in sub-section C.1 above to the baseline scenario.
In answering the questions on baseline emission monitoring posed in Section C.2, please refer to the guidance provided in Section C.1 for monitoring of the project's actual emissions. If the project has no impact on the activity rate (normally fuel consumed for energy projects), then the activity rate will be the same one used to calculate the project's actual emissions. Similarly, if the project does not result in a switch from one fuel to another, the baseline emission factor will be the same as for the project.

Assumptions related to key parameters that influenced the baseline selection must be monitored to ensure that the selected baseline option remains valid during the course of project operation. If it is observed that key assumptions leave a pre-defined corridor, a baseline revision process must be undertaken.

C.3 Data Quality

This question asks you to assess the quality of the data that you use in the PDD to calculate the project's expected emission reductions as well as the data that will be used during project operation to calculate actual emission reductions. The Prototype Carbon Fund's Preliminary Validation Manual identifies the following guiding principles that relate to data quality:

- Accuracy, which is the relative measure of the exactness of performance indicators (activity data, emission factors, oxidation factors.)
- Completeness: The project documentation should cover all greenhouse gases and emissions sources that are affected by the project.
- Comparability: Methods for estimating actual emissions and baseline emissions should be comparable.
- Consistency: Methodologies and data sources for indicators should be chosen so that project performance can be measured in a consistent fashion over time.
- Reliability: Assumptions about operating characteristics and other parameters must be realistic and likely. Similarly, the baseline validity period should be conservative.
- Validity: Assumptions used should be verifiable.

These principles should be considered in answering this question.

C.4 Quality Assurance and Quality Control

The IPCC's Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories defines quality control (QC) as a "system of routine technical activities to measure and control the quality of the inventory that is being developed." It notes that the QC system is designed to:

- Provide routine and consistent checks to ensure data integrity, correctness and completeness;
- Identify and address errors and omissions; and
- Document all QC activities.

QC activities include simple procedures such as checking the double-checking the mathematical integrity of emissions calculations and ensuring that meters used to measure fuel consumption and properly calibrated and functioning correctly. In addition, the project's record-keeping systems must be designed so that the methodologies and data used in emissions reductions calculations are transparent and supported by appropriate documentation.

Quality assurance (QA) is defined as a "planned system of review procedures conducted by personnel not directly involved in the inventory compilation/development process." These are essentially reviews by third parties to assess the effectiveness of the QC program.

Please describe any QA and QC procedures that will be incorporated into the project design to ensure data quality.

Manual for the development of a verification and certification procedure

Explanations, forms and instructions

Version: March 2001

National Climate Change Coordination Center

Astana, Kazakhstan

1. Explanations

The purpose of this manual is to provide operational guidelines for the implementation of activities related to developing a verification and certification procedure for a Joint Implementation (JI)/Clean Development Mechanism (CDM) project in Kazakhstan. The manual is designed for use by project developers as well as both government officials and "operational entities" (described below) that prepare JI/CDM projects undertaken in Kazakhstan.

This procedure has been developed by Kazakhstan's National Climate Change Coordination Center (CCCC), which is the institution responsible for the administration of the CDM in Kazakhstan. The focus of the manual is on meeting international requirements for JI/CDM projects.

This manual is an integrative part of the uniform project design document (UPDD) which is the document that is to be used by all project developers that propose and submit project documentation.

Context

Rules for developing verification and certification procedures are guided by the language of document FCCC/SB/2000/10/Add.2.

These rules state that the designated OE performing the verification is to determine the project's emission reductions by taking the following steps:

- Determine whether the project documentation is in accordance with the requirements for PDDs;
- Conduct on-site inspections, as appropriate, which may comprise, inter alia, a review of performance records, interviews with project participants and local stakeholders, collection of measurements, observation of established practices and testing of the accuracy of monitoring equipment.
- Verify that monitoring methodologies have been applied correctly and that their documentation is complete and transparent.

Definitions

In the context of this manual, the following definitions apply:

- Verification: Confirmation by examination and provision of objective evidence by an independent and qualified organization that the project emission reductions are achieved and that other JI/CDM requirements are met.
- Certification: Written assurance by an independent and qualified organization that the project has, during a specified time period, achieved the verified reductions.

- Registration is the formal acceptance by the executive board of a validated project as a CDM project activity. Registration is a prerequisite for the verification, certification and issuance of CERs related to that project activity.

Procedure

This manual guides users through the following steps:

- Defining auditing objectives, criteria and information needs
- Conducting the audit
- Draft audit and verification report
- Final verification report
- Certification of emission reductions

2. Forms

Form D: Verification and Certification Procedure

D.1 Defining auditing objectives, criteria and information needs *Please specify the objectives, criteria and information needs for the planned audit.*
D.2 Conducting the audit *Please submit the name of the operational entity that you have selected for validation purposes. Please note that the entity has to be accredited by CCCC.* *In conducting the audit, the OE needs to document:* – *Audit of records on reported emission reductions* – *Audit of records on management and monitoring system* – *Audit & Verification Plan and Schedule* – *Audit checklist* – *Audit preparation and requests* – *Audit & verification schedule*
D.3 Draft audit & verification report *Please state here when the draft audit and verification report was submitted for review to project sponsors and the CCCC. Please enclose a copy of the report.*

D.4 Corrective action responses

Please state here when corrective action responses were submitted to OE and CCCC. Please enclose a copy of the report.

D.5 Final verification report

Please state here when the preliminary validation report was submitted for review to project sponsors and the CCCC. Please enclose a copy of the report.

D.6 Certification of emission reductions

On the basis of the final verification report, the OE issues a certification report confirming the certification of a quantity of ERU/CERs from a JI/CDM project activity and submits it to the CCCC. The CCCC then:

- *assigns each ERU/CER a unique serial number,*
- *collect all required fees, and*
- *transfer ERU/CER to registry accounts of project participants, as specified by the distribution agreement by the involved Parties.*

Please state here when the certification report was submitted to CCCC. Please enclose a copy of the report.

3. Instructions

D.3 Draft audit & verification report

The OE must recommend changes to the project participants if necessary and then provide a verification report to the project participants, the countries involved in the project and the CDM's executive board.

Under normal circumstances, in conducting the verification the designated OE should first perform a "desk study" in which it reviews the monitoring report and other project documentation and then visit the project site to interview project participants, inspect equipment and records, and observe project activities. The guidelines for the ERU-PT program, the Netherlands' program for emission reduction projects, notes that goals of the verification process should be to ensure that:

- reported emission reductions are verifiable and can be considered real;
- that the key factors influencing the production of emission reductions are properly controlled, monitored and measured (this means, for instance, ensuring that equipment is properly maintained);
- the project is executed in such a way that the Project Design Document and monitoring plan are still valid;
- the monitoring report conforms to the monitoring plan;
- the monitoring report is transparent and verifiable; and
- calculations are made in a correct and transparent manner.

Clearly, one rule that project participants should keep in mind as they undertake project activities is that while operating the project so that it delivers the expected emission reductions is important, so too is clear documentation and archiving of information.

D.6 Certification of emission reductions

Based on its verification report, the OE must then issue a certification report that specifies the quantity of emission reductions it has determined that the project achieved. Like the verification report, this report goes to the project participants, the countries involved and the CDM executive board. The certification report is essentially a request to the executive board to issue Certified Emission Reductions (CERs.)